

Some records of non-marine molluscs for Banks and eastern Bass Straits, Tasmania

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Abstract

The collecting of invertebrates was a minor interest during visits to 100 islands of Banks and eastern Bass Straits. Thirty-one species of non-marine molluscs were recorded from twenty-two of the islands. The distribution of these species is discussed. (*The Victorian Naturalist* 126 (6), 2009, 203–206)

Keywords: Non-marine molluscs, Tasmanian islands, Banks Strait, eastern Bass Strait

Introduction

Thirty-one non-marine molluscs have been recorded on 22 of 100 islands visited in Banks and eastern Bass Straits, Tasmania, from Hogan Island, near the Victoria-Tasmania border, to Swan Island, just off the north-eastern tip of the Tasmanian mainland. Nine snails and slugs are exotics. This contribution discusses the distribution of the species and presents a table showing the islands on which they have been found to date.

The names of the described species follow Smith (1992). The undescribed *Tasmaphena* sp. and Charopidae sp. are taken from Bonham (2003). Mention of the *Physa* sp. cf. *hainesii* is a pers. comm. from Dr Kevin Bonham (7 June 2007). He noted that 'it is not clear whether *Physa hainesii* is present in Tasmania'.

Native and exotic snails of fresh water

Seven species are confined to streams, swamps or lagoons. Only Deal, Flinders, Cape Barren and Clarke Islands have streams. The latter three also have many swamps and lagoons of a wide range of sizes.

Just one stream on Flinders Island has been searched, being the section of North Pats River where it runs through the author's bush block about 500 m upstream of the confluence with South Pats River. Only *Potamopyrgus antipodarum*, a very invasive species from New Zealand, was found. No streams on Cape Barren, the second largest of the eastern islands, have yet been searched. *Assiminea buccinoides* was collected in Maclaine's Creek, the north-western stream of Clarke Island, the third largest of the eastern islands. Deal Island has three creeks that all cease running in very dry years but can retain pools. The three freshwater species col-

lected there, *Fluvidona* sp. cf. *dunrobinensis*, *Austropyrgus gunnii* and *Potamopyrgus antipodarum* are likely to be the only ones present.

The main area of fresh lagoons and swamps that has been examined on Flinders Island is the strip of about 2500 ha of Crown land by Five Mile Road in the north-eastern part of the island. More than 80, of a wide range of sizes, have been reached so far. The only snail found was *Glyptophysa gibbosa* and it was in a few of the largest swamps and lagoons to the east of the road. This species also occurs in the eastern drain and dies in large numbers when it dries each year.

Two lagoons of the south-eastern part of Flinders Island have also been inspected. They have seldom carried much water since the El Niño of 1982 and no live snails were found in them. Parts of the margins of the major one, E-Shaped Lagoon, show many shells of *G. gibbosa*, but they are old and weathered, and had been scratched out by wombats. Almost the whole surface of Bennett's Lagoon is turned over regularly by the same marsupials, and shells whiten it. All are weathered and the five species point to three periods in its recent history. The first period is represented by two bivalve species. *Anapella cycladea* occurs in littoral mud or sand (Lamprell *et al.* 1992). *Katelysia scalarina* occurs in littoral sand (Lamprell *et al.* 1992) or sand in bays and estuaries (Wilson 2002). The *Salinator fragilis* and *Coxiella striata* shells would date from its time as a saline lagoon when it was probably an arm of the adjacent Logans Lagoon. The *G. gibbosa* results from its recent period as a freshwater lagoon. It certainly held water during Charles Bennett's time in the 1920s. He dug, or had others dig, a drain by

using shovels. The drain runs from the swampy flat west of the lagoon, through it—with feeder drains—and on to Logans Lagoon, a distance of almost a kilometre.

While the largest lagoons of the smaller islands occur on Long and Badger Islands, none is permanent. Badger has just one, near the mid-north coast, but it was reduced to a tiny pool during the visit and so the sole species obtained, *Austropeplea tomentosa*, may not be the only one present when the lagoon is brimming. One of the three lagoons on Long Island was reached during a plant collecting trip and, while *Physa* sp. cf. *hainesii* was collected, the area was not examined thoroughly. The shallow lagoon behind the western beach of Vansittart Island is much smaller and no snails were noticed during plant collecting. There are very small lagoons on Rum, Goose, Preservation, the Inner Sister and Boxen Islands, but no trace of any freshwater species was noticed. These sites are probably too small and temporary to support breeding populations.

Native snails of saline water

Only one of the five major saline lagoons of the south-eastern coast of Flinders Island was inspected. Logans Lagoon is generally not open to the sea but receives much water over the low dune at its mouth, especially during gales. *Salinator fragilis* was common in the two minor lagoons that open to the channel near the mouth of the main lagoon, and was also noticed in its major arm. *Coxiella striata* was widespread in the latter area and leaves small banks of dry shells when most of the arm dries. Only the latter species was noticed in the southern arm in August 2006. In dry years it is a separate body of water.

Smith (1992) records *S. fragilis* as ‘... detritus-feeder, supra-littoral, littoral, mangrove; mud-flats.’ So its occurrence in Logans Lagoon, which has not been open to the sea since the 1970s, represents an unusual extension of the species’ habitat. Only *S. fragilis* was recorded in the extensive saltings by the mouth of Deep Bay River on the northern coast of Cape Barren Island in November 2007.

Native land snails

The most widespread of the 13 native land snails is *Pernagera officieri*, which was collected on 17 islands. It even persisted on Bass Pyramid, a huge isolated rock about 12 nautical miles west

of the north-western point of Flinders Island. Its vegetation is very sparse and covers no more than about 60 m². *Helicarion cuvieri*, which usually occurs in damp scrub and gullies, has been found on only four islands. While there is a tree fern gully on Green Hill at Clarke Island, it was only searched for plants. It has been much damaged by fires, and drier than it would have been before the cover was thinned, but the species may yet be found there.

The richest small area for native snails was found, by chance, on Preservation Island when the author was unable to leave the island, in the 4.2 m boat, during a strong gale that lasted for 10 days. A patch of ancient Coast Currant *Leucopogon parviflorus*, on a planed-down old lime sand dune behind the southern end of Horse-shoe Bay, was worked for lichens. When they were being examined by using a 10x magnification glass, some tiny snails were noticed. Four species were identified at Museum Victoria and three of them had not previously been found on any of the other islands. They are *Paralaoma caputspinulae*, *Magilaoma penolensis* and *Tornatellinops jacksonensis*. The latter was a new record for Tasmania.

In mapping the distribution of *T. jacksonensis*, Smith and Kershaw (1979) showed it as occurring throughout the islands of the eastern end of the Straits. However, there is as yet no basis for assuming such a widespread distribution on the eastern islands. Smith and Kershaw (1981) mapped the Tasmanian occurrence of the species accurately. The snail is so small, up to 2 mm long, that it could easily be overlooked. It is not known whether any of the three species persists on Preservation Island. The leaseholders cleared a substantial part of the ancient Coast Currant bushes in about 2001 in order to enlarge the cattle yards.

Native slug

Cystopelta petterdi was found by accident on the high western slope of Mount Munro, the summit of Cape Barren Island, when sections of a tussock-grass clump *Poa labillardierei* were pulled up during plant collecting. Among the bases of the haulms were what resembled, at first, woody capsules from the nearby teatree. A closer look showed that they were slugs. Later, the species was found on Flinders Island. Just one was noticed, during thirty visits to the vicinity of Strzelecki Peaks, on a day when the peaks were cloud-capped and all the rainforest

shrubs were dripping. There was also a possible record in a dense patch of the moss *Dicranoloma billardierei* by the confluence of Summer Camp Creek and its unmapped main eastern tributary.

Exotic snails

Five exotic snail species have been found so far. The most widespread is the Swollen Snail *Prietoecella barbara*. Its presence on Flinders and Deal Islands, both settled in the 19th century, is easy to understand. The population on Roden Island was probably introduced when timber was shipped to the island for the building of stockyards. The snail has reached two more islands, the Inner Sister and Hogan, since the author's collecting began in the early 1970s. It was taken to the latter on second-hand building materials that were shipped from Flinders Island in order to construct a hut for the leaseholders who run cattle there.

The Garden Snail *Helix aspersa* had reached Little Dog Island by the time of the author's first stay there in the early 1970s. As this island was inhabited by the 1860s, and worked for mutton-birds until about 1970, the building materials brought in for huts and birding sheds are the likely source of the infestation.

The Dune Snail *Theba pisana* was already established on Deal Island by the author's first long visit in November-December 1970. It has since spread from the heavily-infested Browns Bay area, near the Lower Quarters of the lighthouse, to the gully leading to Farm or Garden Cove. Dune Snails reached Killiecrankie Bay, on the north-western coast of Flinders Island, by the early 1990s. The most likely source is snails settling on a dinghy, or dinghies, beached in the vegetation at the head of the beach at Browns Bay. A live snail was found on the road verge at Pine Scrub on Flinders Island in September 2006. It might have fallen from a dinghy towed from Killiecrankie Bay. A local fisherman told me that on wet days Dune Snails would even settle on the tyres of cars parked on the beach at Killiecrankie Bay (Bruce Wheatley, pers. comm.). The species has the potential to extend its range throughout the discontinuous, limy, western coastal zone of Flinders Island.

The other two exotics, *Oxychilus cellarius* and *Microxeromagna armillata*, seem to have a very limited range on Flinders Island so far.

Exotic slugs

Four exotic species have been recorded to date. *Milax gagates* is restricted to the Inner Sister Island and is likely to have reached it with plants, etc. shipped directly from Launceston. *Arion intermedius* has been noticed only on Flinders Island. It occurs north of Whitemark by North Pats River and was also found in a minor southern gully of the western spur of Walkers Hill. At the latter spot it was under very tall Tasmanian Blue Gums *Eucalyptus globulus* subsp. *globulus*, beside the road.

Deroceras reticulatum has been found on five islands, including Badger and Big Dog, that were first settled before 1860. *Lehmannia nyctelia* appears to be widespread on Flinders Island. It was introduced to the Inner Sister in the 1990s when the old farm-house was renovated extensively.

Discussion

The collecting has been part of general survey work and so has not been the result of a thorough examination of any of the islands concerned. It was considered that Deal Island had been worked fairly well. However, two new records were made - on a dry, very exposed western headland - during a visit late in 1987. One of these, *Pedicamista coesus*, was the author's first record of the species. *Austropyrgus gunnii*, found in the island's western stream during the same visit, was also novel to the author. So other native species may yet be found on the eastern islands.

These records are being published now as a report of work in progress and to show potential collectors how much remains to be done. A more detailed account may be written when the author's collecting in the region comes to an end. The bulk of it was done between 1970 and 1981 with only occasional extra records being made since then. Most of the specimens were lodged at Museum Victoria. The exceptions were three late collections from Deal Island, and the one from North East Island; they are held at the Tasmanian Museum and Art Gallery in Hobart.

Acknowledgements

When he was the Curator of Invertebrates at the National Museum of Victoria, the late Dr BJ Smith encouraged my collecting and also named most of the specimens. RJ Plant, also of the National Museum of Victoria, kindly made her records for Deal and Erith Islands available to me. Miss AJA Green, the some-

time Curator of Invertebrates at the Tasmanian Museum and Art Gallery, named the four last specimens from Kent Group. Elizabeth Turner, Curator of Invertebrates at the Tasmanian Museum and Art Gallery, determined the bivalves from Bennett's Lagoon. Dr Kevin Bonham, as referee, made various very helpful and pertinent comments on the submitted draft. Maureen Christie was very helpful during the period 1967 to 1972. Several light-keeping families on Deal and Swan Islands helped in various ways. At least twenty others assisted with transport to islands.

References

Bonham K (2003) Biogeography of Tasmanian Land Snails. (Unpublished PhD thesis, University of Tasmania)

- Lamprell K, Healy JM and Whitehead T (1992) *Bivalves of Australia*, Vol 1 (Crawford House Press: Bathurst, NSW)
- Smith BJ (1992) Non-Marine Mollusca. In *Zoological Catalogue of Australia*, Vol 8, 405 pp. Ed WVK Houston (AGPS: Canberra)
- Smith BJ and Kershaw RC (1979) *Field Guide to the Non-Marine Molluscs of South Eastern Australia*. (Australian National University Press: Canberra)
- Smith BJ and Kershaw RC (1981) *Tasmanian Land & Fresh-water Molluscs*. Fauna of Tasmania Handbook No. 5 (University of Tasmania: Hobart)
- Wilson BR (2002) *Handbook to Australian Seashells*. (Reed New Holland: Sydney)

Received 22 September 2005; accepted 22 March 2007

Appendix. Table of non-marine molluscs for Banks and Eastern Bass Straits, Tasmania. The species are listed in the order given by Smith and Kershaw (1981). The islands are listed from north to south. x = Specimens collected, r = record by Rhyllis Plant, o = observed occurrences, * = Exotic species.

	Hogan	Erith	Dover	Deal	North East	Craggy	Bass Pyramid	Inner Sister	Roden	Flinders	Babel	Mile	Mount Chappell	Badger	Long	Little Dog	Great Dog	Cape Barren	Preservation	Sea Lion	Clarke	Swan	
<i>Coxiella striata</i>											x												
<i>Austropyrgus gunnii</i>					x																		
<i>Fluvidona</i> sp.cf.					x																		
<i>dunrobinensis</i>																							
* <i>Potamopyrgus antipodarum</i>					x						x												
<i>Assimineca buccinoides</i>																							x
<i>Salinator fragilis</i>											o								o				
<i>Austropepleu tomentosa</i>														x									
<i>Glyptophysa gibbosa</i>										x													
<i>Physa</i> sp. cf. <i>hainesii</i>															x								
<i>Succinea australis</i>										x					x								
<i>Tornatellinops jacksonensis</i>																							x
<i>Pupilla</i> sp.		x																					x
<i>Tasmaphiena</i> sp.		r	x	x		x													x				
<i>Paralaoma caputspinulae</i>																							x
<i>Laomavix collisi</i>			x								x			x		x							x
<i>Pedicamista coesus</i>					x																		
<i>Magilaoma penolensis</i>																							x
<i>Pernagera officieri</i>	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
* <i>Arion intermedius</i>											o												
* <i>Oxytelus cellarius</i>					x						o												
<i>Thryasona diemenensis</i>											x												x
Charopidae sp.											x												
* <i>Deroceras reticulatum</i>											x			x				x	x				
* <i>Lehmannia nycetelia</i>								o	x										x				
* <i>Milax gagates</i>								x															
<i>Cystopelta petterdi</i>											o												x
<i>Helicarion civieri</i>				x	x						x												x
* <i>Prietocella barbata</i>	o				x			o	x	x									o				
* <i>Helix aspersa</i>					x					x						x							
* <i>Theba pisana</i>					x					o													
* <i>Microxeromagna armillata</i>								x															